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CLAIM AMENDMENTS

1. (Currently Amended) A method of controlling residual stress in conjunction with an additive manufacturing a direct-metal-deposition (DMD) process, comprising the steps of:

providing a substrate;
providing a deposition head including a laser surrounded by a metal powder feed;
heating a localized region of the substrate with the laser to create a melt pool while feeding metal powder into the melt pool to achieve the build-up of material in a deposition zone; and
depositing a material onto the substrate in a deposition zone using [[a]] the DMD process; and
directing the beam of one or more lasers into the zone following the deposition of the material at a temperature less than the melting point of the material as a means of controlling residual stress.

2. (Original) The method of claim 1, wherein the laser used to deposit the material is also used to control the residual stress.

3. (Original) The method of claim 1, wherein a plurality of lasers are used to control the cooling rate of the deposited material.

4. (Original) The method of claim 1, wherein the location or intensity of the laser used to control the stress is varied to adjust the location and/or magnitude of the residual stress.

5. (Original) The method of claim 4, wherein the intensity of the laser is controlled through defocusing of the beam.

6. (Original) In a direct-metal deposition (DMD) process wherein a laser beam is used to melt a powder feed to deposit a material on a substrate, a method of controlling the build-up of residual stress, comprising the steps of:

depositing a layer of the material onto a previously deposited layer by moving the laser beam and powder feed along a prescribed deposition path; and

following the deposition path with a laser beam incapable of remelting the material as a means

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of controlling the build-up of residual stress.

7. (Original) The method of claim 6, wherein the laser used to deposit the material is also used to control the residual stress.

8. (Original) The method of claim 6, wherein a plurality of lasers are used to control the cooling rate of the deposited material.

9. (Original) The method of claim 6, wherein the location or intensity of the laser used to control the stress is varied to adjust the location and/or magnitude of the residual stress.

10. (Original) The method of claim 9, wherein the intensity of the laser is controlled through defocusing of the beam.

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